

## BING-XING HUO, Ph.D.

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### ACADEMIC POSITIONS

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2022.5 – present	<b>Principal Investigator, Associate Director of Data Strategy and Alliances</b> Data Sciences Platform, Broad Institute of MIT and Harvard
2019.1 – 2022.4	Computational Science Manager, Cold Spring Harbor Laboratory
2015.7 – 2019.1	Research Scientist, Brain Science Institute, RIKEN, Japan ( <i>Joint appointment</i> ) Collaborative Scientist, Cold Spring Harbor Laboratory
2015.2 – 2015.6	Postdoctoral Scholar, Center for Neural Engineering, Pennsylvania State University
2010.8 – 2014.12	Research Assistant, Center for Neural Engineering, Pennsylvania State University

### EDUCATION

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Ph.D., Engineering Sciences and Mechanics (*Neural Engineering track*), Pennsylvania State University, 2010-2014

M.S., Biology (*Computational Neuroscience*), New York University, 2008-2010

M.A., Economics, Boston University, 2006-2007

B.Sc., Mathematics and Physics (*double major*), The University of Hong Kong, 2003-2006  
(*Joint program*) Software Engineering, Tsinghua University, 2002-2003

### ACTIVE AND COMPLETED RESEARCH SUPPORT

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#### Active Research Support (Total: \$7.7M)

Funding Agency	Project Title	Dates	Funding Amount	Role
NIH/NIMH RF1MH133777	A scalable cloud-based framework for multi-modal mapping across single neuron omics, morphology and electrophysiology	08/2023 – 08/2026	\$2,415,243	PI (20%)
NIH/NIDA UM1DA052244	NeMO Archive: SCORCH Support, Coordination and Outreach	07/2025 – 06/2030	\$2,000,000	Site PI (8%)
NIH/NINDS U24NS139927	Integrative Connectomics Coordination Center (IC3)	12/2024 – 11/2029	\$2,121,199	Site PI (15%)
NIH/NHLBI U24HL148865	LungMAP Phase 3 – Data Coordinating Center	09/2024 – 07/2029	\$800,000	Site PI (10%)
NIH/NIMH R24MH114788	Neuroscience Multi-omic Data Archive (NeMO)	07/2024 – 06/2027	\$346,169	Site PI (8%)

## Completed Research Projects (Total: \$4.5M)

Funding Agency	Project Title	Dates	Funding Amount	Role
NIH/NCI (via Leidos/FNLCR)	Cancer Data Aggregator (CDA)	07/2023 – 08/2025	\$1,093,253	PI (10%)
NIH/NCI (via Leidos/FNLCR)	Cancer Research Data Commons – Cloud Resources	08/2023 – 02/2025	\$866,667	PI (3%)
NIH/NHLBI U24HL148865	LungMAP Phase 2 – Data Coordinating Center	08/2022 – 07/2024	\$320,000	Site PI (15%)
NIH/NIDA UM1DA052244	NeMO Archive: SCORCH Support, Coordination and Outreach	07/2024 – 06/2025	\$261,851	Site PI (8%)

## TEACHING & MENTORSHIP

- Faculty, *Integrative Lung Bioinformatics: from Data to Discovery*, American Thoracic Society Postgraduate Course, San Francisco, May 2025
- Invited Panelist, *Successful Strategies for Collaboration*, May 2025
- Lecturer, *Registration and Data Mining Workshop*, Cold Spring Harbor Asia Summer School, 2019
- Mentor: high school, undergraduate, doctoral, and postdoctoral trainees, early-stage scientists in computational biology and data science (2015–present)

## PROFESSIONAL SERVICE & LEADERSHIP

NIH Review	Invited Reviewer, MCST E-52, MCST U-70
Consortium Governance	Steering Committee member (BRAIN CONNECTS, SCORCH, LungMAP consortia); Co-Chair of Barcoding Technologies Working Group (BRAIN CONNECTS)

### Conference & Workshop Organization

- Co-Chair, Nanosymposium, Society for Neuroscience, 2025.
- Organizer, Nanosymposium, Society for Neuroscience, 2018, 2019.
- Organizing Committee member, SCORCH Consortium Semi-Annual Meetings (2023-2025).
- Co-Chair, INCF Workshop *Streamlining Cross-Platform Data Integration* Neuroinformatics Assembly 2023.

## PUBLICATIONS

BRAIN CONNECTS Consortium. “BRAIN Connectivity Across Scales.” *Under Review*.

Mezias C\*, **Huo B-X\***, Bota M, Jayakumar J, Mitra PP. “Establishing neuroanatomical correspondences across mouse and marmoset brain structures.” *Under Review*.

Tward DJ, Gray DP, Li X, **Huo B-X**, Banerjee S, Savoia S, Mezias C, Das S, Miller MI, Mitra PP. “Solving the where problem and quantifying geometric variation in neuroanatomy using generative diffeomorphic mapping.” *Under Review*.

Gaddis N, *et al.* (2024) “LungMAP Portal Ecosystem: Systems-Level Exploration of the Lung.” *Am J Respir Cell Mol Biol.* 70 (2), 129-139.

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\* Joint first author/Equal contribution.

- Hawrylycz M, *et al.* (2023) “A guide to the BRAIN Initiative Cell Census Network data ecosystem.” *PLOS Biol.* 21(6):e3002133.
- Ascoli GA, **Huo B-X**<sup>†</sup>, Mitra PP. (2022) “Sizing up whole-brain neuronal tracing.” *Science Bulletin* 67(9):883-884.
- BRAIN Initiative Cell Census Network (BICCN). (2021) “A multimodal cell census and atlas of the mammalian primary motor cortex.” *Nature* 598, 86–102.
- Muñoz-Castaneda R, *et al.* (2021) “Cellular anatomy of the mouse primary motor cortex.” *Nature*. 598:159–66.
- Wang D, Magee L, **Huo B-X**, Banerjee S, Li X, Wang Y, Mitra PP. (2020) “Detection and Skeletonization of tracer injections using topological methods.”. *arxiv*: 2004.02755
- Banerjee S, Wang D, Magee L, Li X, **Huo B-X**, Mathos K, Jayakumar J, Lin MK, Huang JZ, Wang Y, Mitra PP. (2020) “Semantic segmentation of microscopic neuroanatomical data by combining topological priors with encoder-decoder deep networks.” *Nature Machine Intelligence* 2, 585–594.
- Tward DJ, Lee BC, Li X, **Huo B-X**, Mitra PP, Miller M. (2019). “3D mapping of serial histology sections with anomalies using a novel robust deformable registration algorithm.” *MICCAI MFCA 2019* pp. 162-173.
- Huo B-X**<sup>\*</sup>, Zeater N<sup>\*</sup>, Lin MK, Takahashi YS, Hanada M, Nagashima J, Lee BC, Grünert U, Miller MI, Rosa MGP, Okano H, Martin PR, Mitra PP. (2019) “Relation of koniocellular layers of dorsal lateral geniculate to inferior pulvinar nuclei in common marmosets.” *Eur J Neurosci* 2019; 00: 1– 14.
- Lin MK, Takahashi YS, **Huo B-X**, Hanada M, Nagashima J, Hata J, Tolpygo AS, Ram K, Lee BC, Miller MI, Rosa MGP, Sasaki E, Iriki A, Okano H, Mitra PP. (2019). “A High-throughput neurohistological pipeline for brain-wide mesoscale connectivity mapping of the common marmoset.” *eLife* 8: 72.
- Majka P, Rosa MGP, Bai S, Chan JM, **Huo B-X**, Jermakow N, Lin MK, Takahashi YS, Wolkowicz IH, Worthy KH, Rajan R, Reser DH, Wójcik DK, Okano H, Mitra PP. (2018). “Unidirectional monosynaptic connections from auditory areas to the primary visual cortex in the marmoset monkey.” *Brain Structure and Function*, 1-21.
- Huo B-X**, Greene SE & Drew PJ. (2015) “Venous cerebral blood volume increase during voluntary locomotion reflects cardiovascular changes.” *NeuroImage* 118: 301-12.
- Huo B-X**, Gao Y-R & Drew, PJ. (2015) “Quantitative separation of arterial and venous cerebral blood volume increases during voluntary locomotion.” *NeuroImage* 105: 369-79.
- Shirey MJ, Smith JB, Kudlik DE, **Huo B-X**, Greene SE & Drew PJ. (2015) “Brief anesthesia, but not voluntary locomotion, significantly alters cortical temperature.” *J Neurophys* 114(1): 309-22.
- Huo B-X**, Smith JB & Drew PJ. (2014). “Neurovascular coupling and decoupling in the cortex during voluntary locomotion.” *J Neurosci* 34 (33): 10975-81.

#### Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/myncbi/bingxing.hu0.1/bibliography/public/>

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<sup>†</sup> Corresponding author.